Ordering number: EN 2071C

Monolithic Linear IC

No.2071C

SANYO

LA5527

Low-Voltage DC Motor Speed Controller

Especially suited for controlling speed of a low-voltage (3V min.) DC motor for cassette tape recorders, 8mm motion-picture cameras, record players

Features

- Wide operating voltage range (1.8 to 10V)
- Easy to vary speed
- Large starting torque
- Easy to control rotational speed from very low speed to high speed

Maximum Ratings at Ta=25°C

			unit
Maximum Supply Voltage	$V_{CC}max$	12	V
Allowable Power Dissipation	Pdmax	1	W
Operating Temperature	Topr	−20 to +80	°C
Storage Temperature	Tstg	−40 to +150	°C
Motor Current	Im	1000	mA

Operating Conditions at Ta=25°C

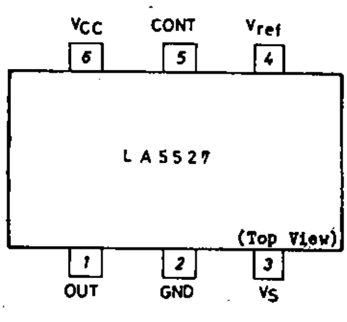
			unit
Supply Voltage Range	V_{CC} op	1.8 to 10	V
Recommended Operating Temperature	Topg	−10 to +60	°C

Operating Characteristics at Ta=25°C

			min	typ	max	unit
Reference Voltage	V_{ref}	V_{CC}=3V, I_m=100mA	1.15	1.25	1.3	V
Quiescent Current Dissipation	I_d	V_{CC}=3V, I_m=100mA		3.0	6.0	mA
Shunt Ratio	K	V_{CC}=3V, I_m=50-150mA	45	50	55	
Residual Voltage	V_{sat}	V_{CC}=3V, I_m=200mA Vref-Vcont		0.3	0.5	V
Voltage Characteristic of Reference Voltage	$\frac{\triangle Vref}{Vref}/\triangle VCC$	I_m=100mA, V_{CC}=1.8 to 10V		0.1	0.3	%/V
Voltage Characteristic of Shunt Ratio	$\frac{\triangle K}{K}/\triangle VCC$	I_m=50-150mA, V_{CC}=1.8 to 10V		0.05	0.3	%/V
Current Characteristic of Reference Voltage	$\frac{\triangle Vref}{Vref}/\triangle Im$	I_m=20 to 200mA, V_{CC}=3V		0.005	0.01	%/mA

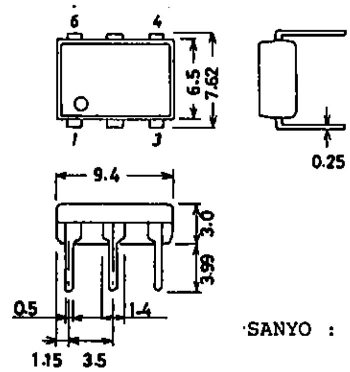
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Pin Assignment



Package Dimensions 3048A

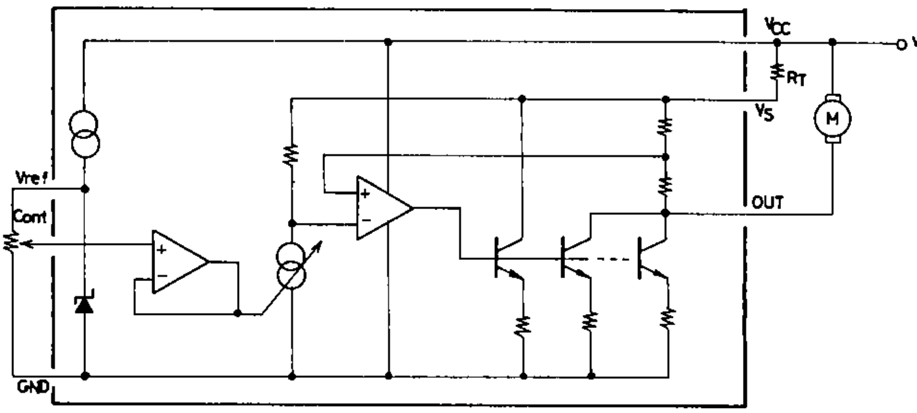
unit: mm



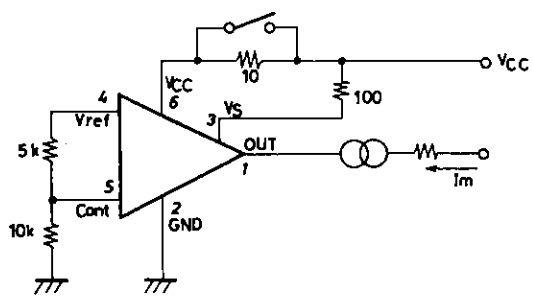
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			min	typ	max	unit
Current Characteristic of Shunt Ratio	$\frac{\Delta K}{K}/\Delta Im$	V_{CC}=3V, I_m=20-50mA to 170-200mA	-0.02	-0.005	0.02	%/mA
Temperature Characteristic of Reference Voltage	$\frac{\Delta Vref}{Vref}/\Delta Ta$	V_{CC}=3V, I_m=100mA, Ta=-20 to +80°C		0.02		%/°C
Temperature Characteristic of Shunt Ratio	$\frac{\Delta K}{K}/\Delta Ta$	V_{CC}=3V, I_m=50-150mA, Ta=-20 to +80°C		-0.002		%/°C

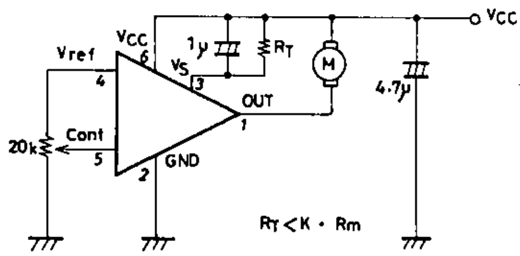
Equivalent Circuit Block Diagram



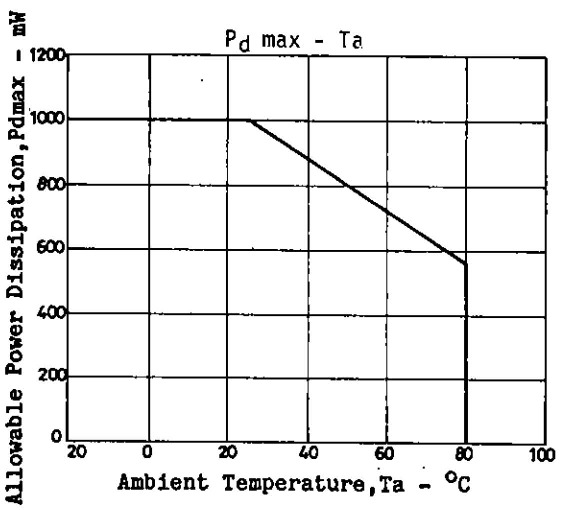
Test Circuit



Application Circuit



Unit (resistance: Ω, capacitance: F)



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